

Exhibit R

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

-----: :
: :
SONY MUSIC ENTERTAINMENT, et al., :
Plaintiffs, :
: :
-vs- : Case No. 1:18-cv-950
: :
COX COMMUNICATIONS, INC., et al., :
Defendants. :
: :
-----:

VOLUME 1

TRIAL TRANSCRIPT

December 2, 2019

Before: Liam O'Grady, USDC Judge

And a Jury

1 MarkMonitor to send the notices. Now, MarkMonitor, and you're
2 going to hear a lot about them, is the industry leading
3 antipiracy and brand protection company in the world.
4 MarkMonitor serves half of the Fortune 100 companies.
5 MarkMonitor provides similar antipiracy protection services to
6 movie studios, game companies, book publishers, and numerous
7 others. And there's a reason that everybody hires MarkMonitor
8 to do this: because they are the gold standard in antipiracy
9 work.

10 So here's what MarkMonitor did. MarkMonitor has a
11 proprietary system that goes on to peer-to-peer networks and
12 searches for potentially infringing files. MarkMonitor would
13 then download and confirm that a file was infringing. Once
14 MarkMonitor had verified that the file was infringing, it kept
15 a log of that file and that file's hash value.

16 Now, what's a hash value? So every file has a unique
17 thing called a hash, and that hash is essentially a fingerprint
18 of the file, and every, every file has a unique hash. That
19 means that if you see two files, they can even have different
20 names of the files, you can have one file A, one file B. If
21 the same thing is inside of them, they'll have the same hash.
22 But if they are even slightly different, they'll have a
23 different hash. And you're going to hear a lot about hashes.

24 So MarkMonitor kept a library of all of the
25 infringing hashes that they found on peer-to-peer networks.

1 MR. OPPENHEIM: Very well.

2 THE COURT: When we get there, and I'll look at it
3 again. Perhaps I didn't appreciate the Stroz report and what
4 it said. I've looked at a fair amount of information over the
5 last couple of weeks.

6 So I'll continue to look at it, and you can renew
7 your motion at that time.

8 MR. OPPENHEIM: Thank you, Your Honor.

9 MR. ELKIN: Thank you, Your Honor.

10 THE COURT: All right. Thank you all. We will see
11 you tomorrow at 9 o'clock.

12 NOTE: The December 2, 2019, portion of the trial is
13 concluded.

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16 CERTIFICATE OF COURT REPORTERS

17

18 We certify that the foregoing is a true and
19 accurate transcription of our stenographic notes.

19

20

21 /s/ Norman B. Linnell
22 Norman B. Linnell, RPR, CM, VCE, FCRR

22

23

24 /s/ Anneliese J. Thomson
25 Anneliese J. Thomson, RDR, CRR

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VOLUME 3 (A.M. Portion)

TRIAL TRANSCRIPT

December 4, 2019

Before: Liam O'Grady, USDC Judge

And a Jury

1 and notified Cox, how that worked with regard to the actual
2 e-mail?

3 A. Sure. The MarkMonitor system reads the data. It
4 prepares the e-mail. That e-mail then gets sent to the ISP,
5 in this case Cox. It does that by looking up the IP address
6 and saying, oh, this is the ISP that administers that
7 particular IP address.

8 And the e-mail addresses that I show here on the
9 left, antipiracy2@riaa.com, is where -- is the sender identity
10 in that e-mail, and abuse@cox.net is the recipient, and that
11 is an e-mail address that Cox publishes to the world. It's
12 that if you have a complaint about, for instance, copyright,
13 this is who you're supposed to e-mail to.

14 Q. Sure. And could you explain to the jury what you have on
15 the right side of this slide?

16 A. Yeah. I think I alluded a moment ago that there are some
17 other tests that are made before a notice is sent out in order
18 to ensure the currency of the notice and to send the most
19 relevant notices.

20 So the file has been verified as infringing before
21 the detection process, the evidence collection process ever
22 can be used to send a notice. So if a file hasn't been
23 confirmed to contain infringing content, that, that evidence
24 package is not eligible to send a notice.

25 Then the, the system also tests -- remember I said

B. Frederiksen-Cross - Cross

502

1 A. As I received the original spreadsheet, there was --
2 actually I think that's the one that had an error in it where
3 part of the script that had been used to pull the data was
4 embedded in the spreadsheet, so I mostly used the other one,
5 but generally it was the same information.

6 Q. And then there's a -- you mentioned a hard drive with
7 some songs on it. I heard that correctly, right?

8 A. That's correct, yes.

9 Q. And that's what, a collection -- that's basically all of
10 the songs -- well, never mind.

11 And then there's a spreadsheet that's kind of an
12 index to that hard drive, right?

13 A. That's correct also, yes.

14 Q. Okay. Now, you looked at technical information about
15 Audible Magic, for example, right?

16 A. Some technical information in the source code, yes.

17 Q. Yeah. And you looked at a deposition, I think?

18 A. I'm sorry, yes, I did.

19 Q. Okay. The Audible Magic system works by matching files
20 to a reference database of all of the songs that are covered
21 by the system?

22 A. It actually works by matching this digital fingerprint of
23 a song to a database of digital fingerprints. It's not
24 matching a file to a file. It's, it's the digital fingerprint
25 to the digital fingerprint stored in the database.

1 ours with them this morning. This is a live demonstration.

2 THE COURT: That's what I said. I assume you shared
3 with them --

4 MR. ZEBRAK: Yes, sir.

5 THE COURT: Okay. I mumble also, so I apologize.

6 MR. ZEBRAK: No, that's my fault.

7 THE COURT: So let's do that. Before we resume,
8 let's -- you know, if you need to eat the ham sandwich out on
9 the courthouse steps, then let's get that done so that we can
10 come back at 5 minutes to two.

11 Mr. Buchanan, if you want to address that -- the
12 issue you raised this morning, we can do that right away when
13 we come back as well. Okay?

14 MR. OPPENHEIM: Thank you.

15 THE COURT: All right. We're in recess.

16 NOTE: At this point, the December 4, 2019, morning
17 portion of the case is concluded.

18
19 CERTIFICATE OF COURT REPORTERS

20 We certify that the foregoing is a true and
21 accurate transcription of our stenographic notes.

22 /s/ Norman B. Linnell
23 Norman B. Linnell, RPR, CM, VCE, FCRR

24 /s/ Anneliese J. Thomson
25 Anneliese J. Thomson, RDR, CRR

538

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VOLUME 3 (P.M. Portion)

TRIAL TRANSCRIPT

December 4, 2019

Before: Liam O'Grady, USDC Judge

And a Jury

1 A. I see that.

2 Q. Bill Withers. Click again. Bill Withers. Click again.
3 Bill Withers. Click again.

4 There are 39 of them. I will represent to you that
5 they are all Bill Withers.

6 A. Okay. I will accept your representation.

7 Q. Now, the way the Audible Magic -- I'm sorry -- the
8 MarkMonitor system is built -- well, strike that.

9 Let me ask you about some structural issues with the
14:43:28 10 MarkMonitor system. Can we put up -- can we put up slide 14
11 from Ms. Frederiksen-Cross' direct.

12 Now, this is your three modules. There is the
13 verification module, and the detection module, and
14 notification. I want to focus for a second on the first two.

15 A. Okay.

16 Q. So verification module, that's where MarkMonitor goes out
17 onto the Internet, a peer-to-peer network, finds the song,
18 sends it off to Audible Magic for verification, right?

19 A. Correct. And then gets back a response and stores it
14:45:04 20 away.

21 Q. And then the detection module, that's where the song is
22 sent to -- the information about the song is sent to
23 MarkMonitor's, what they call their collection agents. And
24 they go out on the peer-to-peer networks and they try to find
25 people who are sharing that song, right?

1 the same length of sound clipping to generate the actual
2 fingerprint and have the same reliability according to their
3 testing with respect to the results.

4 Q. And do you recall counsel asking you a number of questions
5 about a directory of files from a hard drive?

6 A. I do, yes.

7 Q. And just to be clear, that spreadsheet that has the
8 directory of the files on the hard drive, that's something
9 separate from the notice data that contains the information
10 that was reported to Cox, correct?

11 A. Absolutely, yes.

12 Q. All right. So -- and to be clear, the digital
13 fingerprints that are submitted to Audible Magic for a lookup,
14 that's something separate than a hash ID for file
15 identification, correct?

16 A. That is correct as well.

17 Q. Okay. So let's say that there's a file with a hash. For
18 simplicity purposes, we'll just call it XYZ.

19 A. Okay.

15:28:41 20 Q. I've looked at a number of these. It's too hard to
21 pronounce.

22 First of all, if a file -- and we're just identifying
23 the file by hash XYZ, do you know if that file with that hash
24 XYZ can be distributed on both the -- on more than one
25 peer-to-peer network at a time?

S. Bahun - Direct

639

1 Q. Do you recognize this document?

2 A. Yes.

3 Q. And can you just briefly -- is this a MarkMonitor
4 document?

5 A. Yes. This is a spreadsheet that we produced containing
6 the records of all of the song files that we downloaded and
7 verified using Audible Magic.

8 Q. Okay. I see there are four tabs.

9 A. Yes.

16:56:33 10 Q. And they relate to each of the networks; is that right?

11 A. Correct.

12 Q. If we look through the four tabs, would they generally
13 look similar?

14 A. Yes.

15 Q. Okay. Can you just quickly walk across this spreadsheet
16 and describe what's in it.

17 A. Sure. So we're on the first tab, meaning BitTorrent. So
18 all of these files were downloaded from BitTorrent.

16:57:09 19 The first column is a Torrent ID, it's just a unique
20 identifier that we attach to a specific torrent file.

21 The next column is Info Hash. So this is the SHA-1
22 hash value or the unique identifier for the torrent.

23 The next column is Matched As. This shows you the
24 key words that we matched when we were looking for the
25 potentially infringing file.

S. Bahun - Direct

640

1 Q. So that was what you were searching for?

2 A. Correct.

3 Q. In the first step?

4 A. Correct. The next is Verified Type Name. This is simply
5 a flag in our database to indicate that the file has been
6 confirmed as real. So you'll see "real" in there.

7 Q. Mr. Duval, could you just scroll up and show that there --
8 on this tab.

9 Mr. Bahun, would you ever see on a spreadsheet like

16:58:06 10 this, this column ever have anything other than "real"?

11 A. No.

12 Q. And why is that?

13 A. Because this data set is for files that were contained in
14 the notices sent to Cox. And no notice would have been sent on
15 a file that wasn't identified as "real."

16 Q. And "real" meaning it was confirmed as what?

17 A. It was a confirmed infringing copy of the song.

18 Q. Okay. Sorry. I got us off the titles. There you go.
19 Can you continue on E, please.

16:58:43 20 A. Sure. So then you have First File Name. That's the name
21 of the individual song the first time we saw it.

22 The next is File Size --

23 Q. Can I just stop on that First File Name?

24 A. Oh, I'm sorry. Yeah.

25 Q. Is that first file name generated by Audible Magic?

S. Bahun - Direct

647

1 and say, you don't have everything, or you have at too much,
2 but that is entirely up to him.

3 THE COURT: He doesn't want you to represent on
4 direct examination that it contains everything.

5 MR. OPPENHEIM: I don't believe I have.

6 THE COURT: I know you haven't so far.

7 MR. OPPENHEIM: Okay.

8 MR. ELKIN: Your Honor, just one point. One issue
9 that we have with regard to the hard drive is that there hasn't
10 been any evidence that anyone at MarkMonitor has actually
11 listened to what it is.

12 There has been no foundation that Mr. Bahun has even
13 listened to what it is being offered for. I think there is a
14 foundational issue that I did address at summary judgment that
15 I don't think this testimony has overcome.

16 MR. OPPENHEIM: Every one of the files went through
17 Audible Magic, which did essentially the equivalent of a
18 digital listening. And Mr. McMullan testified that he listened
19 to a sample of them. And other witnesses -- as did -- excuse
17:07:21 20 me -- Barbara Frederiksen-Cross said she did. So did
21 Mr. Kokakis.

22 So that is simply not accurate.

23 MR. BRODY: At the same time, during
24 Ms. Frederiksen-Cross' examination, we saw examples where the
25 files that were identified in 16, the Audible Magic

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/s/ Norman B. Linnell
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/s/ Anneliese J. Thomson
Anneliese J. Thomson, RDR, CRR

2126

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

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VOLUME 9 (P.M. Portion)

TRIAL TRANSCRIPT

December 12, 2019

Before: Liam O'Grady, USDC Judge

And a Jury

N. Teamster - Direct

2233

1 MarkMonitor design should catch these faulty pieces during the
2 check of the SHA-1 hash. An end-to-end test where this
3 behavior is verified is essential.

4 Q. And why would it be important to test the agents against
5 dishonest BitTorrent clients in uploads of incorrect pieces?

6 A. Without performing that hash check, the agent has
7 absolutely no idea of what it just downloaded from a peer. It
8 could be absolutely anything.

9 Q. Okay. Now, I think another one of the documents you put
10 up that helped you understand this -- the CAS system, was
11 Defendant's Exhibit 17.

12 Can we get that document up, please.

13 Was there anything in this document that helped you
14 understand what MarkMonitor was doing with respect to this hash
15 checking --

16 A. Yes, this was, this was useful.

17 Q. Can we go to page 20 of the exhibit.

18 A. Yep.

19 Q. Can you blow up the screen shot in the middle of that
20 page?

21 Does this show anything about whether MarkMonitor was
22 actually performing the download and SHA-1 hash check from a
23 peer in the CAS implementation of its system?

24 A. Yes, it does.

25 Q. How does it show that?

N. Teamster - Direct

2234

1 A. This is one of the files in the so-called evidence package
2 that the MarkMonitor software assembles when investigating a
3 peer. And this is, this is the content info file within that
4 evidence package.

5 So I believe we heard about that in earlier
6 testimony. But in particular, the -- what we're interested
7 in -- and there's a number of interesting things here. But
8 what you asked about was, can we figure out what's going on
9 with download and hash-based verification. And there are two
10 lines in this file where you can see that that has been logged.

11 Q. Which are those?

12 A. There's one that says: Downloaded. Okay. And to the
13 right of that you can see a report or a log for this
14 investigation, how much of the agent -- sorry, how much of this
15 file the agent downloaded.

16 And there's a second line that says: Verified. And
17 that refers to how much of this file the agent performed that
18 hash-based verification on.

19 And we see both the number of bytes, kilobytes in
20 this case it's represented as, and the percentage of the file
21 for which it did that download and verification.

22 Q. Did you prepare a slide that illustrates how this step is
23 performed in the CAS, the Computer Alert System implementation
24 of MarkMonitor's system?

25 A. Yes.

1 in a BitTorrent network?

2 A. That particular step is identical. Now, it's only
3 downloading one piece. Right. So a real BitTorrent client,
4 obviously probably interested in the whole file. But the step
5 of downloading a piece and verifying would be exactly as a
6 BitTorrent client would do it.

7 Q. And did you prepare a slide about the fourth step in this
8 process?

9 A. I did, yes.

10 Q. What happens in the fourth step?

11 A. Okay. So at this point -- and there's an important --
12 sort of deduction to this "if." Right. If an infringing file
13 is found, right, at a CAS participating ISP, there's a notice
14 sent. Okay. So there's a bunch of things that sort of -- you
15 know, we break that down. And one is, of course, the IP
16 address. We've got to figure out if that IP address is in fact
17 a CAS -- a participating CAS ISP subscriber.

18 The other is, have we found an infringing file? And
19 there's a process by which steps 2 and 3 are joined to
20 determine that, ah, that piece that I just found not only is a
21 piece of the file that was advertised in the torrent, it's a
22 real piece, the verification checked, but also it's a piece of
23 an actual work.

24 So putting steps 2 and 3 together allows the software
25 to make that inference and generate the -- you know, decide

N. Teamster - Direct

2237

1 that it's time to generate a notice.

2 Q. By the way, were you able to examine the software that
3 implemented that step?

4 A. No. That step I never saw. I can only deduce what must
5 have happened. I was able to see the source code for steps
6 three and step four. I was able to identify those parts of the
7 software.

8 And it was really puzzling actually, because the two
9 databases that were used in these two steps appeared to be
10 completely different. Okay.

11 Now, I also was not provided with the schemas for
12 these databases --

13 MR. ZEBRAK: Objection, Your Honor.

14 THE COURT: Sustained. Sustained.

15 THE WITNESS: Okay. Sorry. I'm sorry, academics
16 like to ramble. I apologize.

17 MR. ZEBRAK: I move to strike.

18 THE COURT: Ask another question.

19 MR. BRODY: Yes, sir.

20 BY MR. BRODY: (Continuing)

21 Q. What happens in this step?

22 A. Can you clarify which step you're talking about?

23 Q. Step four.

24 A. I -- oh, I think I described that in maybe too much
25 detail. But to abbreviate that, if the software is able -- or

N. Peamster - Direct

2240

1 perform a download. So, essentially, almost no downloads were
2 performed as a -- as part of producing this evidence.

3 Q. Did you also examine the software to confirm your analysis
4 of the evidence packages?

5 A. I sure did. I'd be happy to talk about that.

6 Q. Did your review of the software -- was it consistent with
7 what you saw in the evidence packages?

8 A. That's an interesting question. So the software, of
9 course -- there's software and then how it's configured.
10 Right. Okay. So I saw some interesting things in the
11 software. Okay.

12 Among them were some variables, including variables
13 that would basically control whether or not the software would
14 perform a download. And if it performed the download, was
15 there a threshold of how much the -- you know, the software --
16 the agent was to download.

17 So in examining the source code, I couldn't tell
18 precisely how those variables were set, and no information was
19 provided to me regarding the configuration of the software.

20 MR. ZEBRAK: Objection, Your Honor. May we have a
21 sidebar on this?

22 THE COURT: Approach the bench.

23 NOTE: A sidebar discussion is had between the Court
24 and counsel out of the hearing of the jury as follows:

25 AT SIDEBAR

1 THE COURT: Okay.

2 MR. ELKIN: Thank you, Your Honor.

3 THE COURT: All right, good. You all have a nice
4 weekend, and we'll see you on Monday morning.

5 MR. OPPENHEIM: Thank you, Your Honor.

6 MR. ELKIN: You too, Your Honor.

7 THE COURT: All right, we're in recess.

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17 accurate transcription of our stenographic notes.

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VOLUME 12

TRIAL TRANSCRIPT

December 18, 2019

Before: Liam O'Grady, USDC Judge

And a Jury

2944

1 or sharing. In this case, we have evidence of both.

2 So what is that evidence? Recall Mr. Bahun, who
3 worked for MarkMonitor. This is the gentleman who the FBI, the
4 Department of Justice, and Homeland Security brings in to train
5 their agents on peer-to-peer issues.

6 And as a company, MarkMonitor is used by some of the
7 largest and most well-known companies in the world: movie
8 studios, book publishers, Google, Apple, Nissan, Coca-Cola,
9 banks, professional sports leagues. MarkMonitor is the gold
09:20:56 10 standard when it comes to antipiracy, and its process is
11 precise and meticulous.

12 MarkMonitor goes on to a peer-to-peer network. It
13 downloads and confirms a file is infringing. It then collects
14 evidence on users distributing that infringing file by
15 connecting to a peer and beginning the download process. By
16 downloading all of the information, that indicates that the
17 peer is actively distributing the infringing file and how.

18 Once all of that is confirmed and documented,
19 MarkMonitor sends an infringement notice to the relevant ISP,
09:21:36 20 and in this case, that was Cox.

21 Mr. Bahun went through numerous data packages of
22 evidence, and ultimately, as you saw, all of that data came
23 together to demonstrate why MarkMonitor's evidence collection
24 process worked.

25 And you will recall that Ms. Frederiksen-Cross

2945

1 testified as a technology expert. Now, she has spent a
2 lifetime looking under the hood at real systems in the real
3 world, and she testified that she reviewed the MarkMonitor
4 process, the MarkMonitor and Audible Magic source code, and the
5 evidence collected in the case, among other things, and her
6 conclusions were clear.

7 She determined that the MarkMonitor system accurately
8 detected peers that are copying and distributing the
9 plaintiffs' copyrighted works, and that it prepares and sends
09:22:27 10 accurate notices about that infringement activity that it
11 detects.

12 During the course of Mr. Bahun's and
13 Ms. Frederiksen-Cross's testimony, they were asked about a
14 couple of different data fields that looked like it had certain
15 hashes that had two different recordings associated with them.
16 Do not be misled. These are litigation games. Cox is
17 desperate to find a glitch, but it can't.

18 You may recall that one of them was a file mislabeled
19 by a user as a Taylor Swift track, when Audible Magic had
09:23:02 20 reported that, in fact, it was a Lady Gaga song. We then
21 played the song in court, and lo and behold, it was Lady Gaga,
22 "Poker Face." That was one of the three examples.

23 That is no different than somebody putting the Lady
24 Gaga CD in the Taylor Swift CD case. This is not an error.
25 Notably, not a single Cox witness, fact or expert, testified at

2950

1 Think about what Mr. Cadenhead said. Now,
2 Mr. Cadenhead no longer works for Cox, but he worked there for
3 a great many years and was the legal counsel responsible for
4 overseeing the abuse program. And what he said was: Cox
5 recognized that there was a real problem with copyright
6 infringement and that the recording industry had proper
7 concerns about it. He testified that Cox almost certainly knew
8 that some of its customers were infringing and needed to stop.

09:30:48 9 So you've heard and seen a lot of evidence on direct
10 infringement, and at the end of the day, you will need to use
11 your common sense. MarkMonitor sent over 270,000 infringement
12 notices. There really can be no doubt that those subscribers
13 were downloading and uploading plaintiffs' music on Cox's
14 network.

15 So now we've covered the issue of direct
16 infringement. Let's turn to the other elements. Two of the
17 other elements have been taken care of for you. The judge has
18 instructed -- instructed you last night that the plaintiffs
19 have already established that they own 10,017 works at issue in
09:31:28 20 this case and that the copyright and its registration in each
21 of those works is valid.

22 The judge has also instructed you that plaintiffs
23 have also established the knowledge element of the contributory
24 infringement claim; that is, plaintiffs have established that
25 Cox had specific enough knowledge of infringement occurring on

1 send this back to them.

2 And hopefully this is just one of these initial
3 gathering-of-information type questions, but we will know that
4 soon enough.

5 All right. Then thank you all for assembling.

6 And we're in recess until we need to get together
7 again. Thank you.

8 NOTE: At this point a recess is taken; whereupon no
9 further matters are heard and the December 18, 2019, portion of
10 the case is concluded.

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CERTIFICATE OF COURT REPORTERS

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